

ABSTRACT

A method of modifying a zeolite catalyst to increase selectivity of the catalyst is achieved by dissolving alumina in a phosphorus-containing acid solution, and treating the zeolite catalyst with the dissolved alumina solution. A method of preparing an aromatic product, such as a xylene product, is also achieved by contacting the modified zeolite catalyst with an aromatic hydrocarbon, such as toluene, and an alkylating agent, such as methanol, under reaction conditions suitable for aromatic alkylation. For xylene products the aromatic hydrocarbon may be toluene and the reaction conditions may be suitable for at least one of toluene methylation and transalkylation.